Lysin Administration on Histiocytoma Sur gical Therapy on a Cat: A Case Study

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Lysin Administration on Histiocytoma Surgical Therapy on a Cat: A Case Study

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Abstract

A 3 years and 5 months old, male cat weighing 4.5 kg short hair breed was presented with the history of lethargy, loss of weight, and with a mass in the inguinal region for past 7 days to Veterinary Teaching Hospital of Airlangga University, Surabaya. Based on histopatholgy, blood hematology and biochemical analysis, the mass was diagnosed as histiocytoma, which was surgically removed and treated with injection of dexamethasone, multivitamin-ATP-mineral, enrofloxaxin and tablet lysin 500mg orally.

Keywords: histiocytoma, cat, lysin

Histiocytoma are rare in cats, the cause of this disease still unknown, it can occur in all of breeds, gender and age. This tumor originated from the Langerhans cells which are immune cells. Most of the histiocytomas are benign, but it can become malignant if present for more than 3 months. Lysine is known to have anti cancer potential, it helps to stimulate destruction and apoptosis of cancer cells, however its role on the histiocytic case in cat has not been reported.

Case History and Observations

A 3 years 5 monhs old, male, cat of indonesia short haired cat weighing 4.5 kg was presented with the history of lethargy, loss of body weight, enlarged axilary lymphnode, dehydration, pale mucous membrane and an abnormal growth in the inguinal subcutaneous tissue for past 7 days to the Teaching Veterinary Hospital, Airlangga University, Surabaya. Blood and serum collected for haematology and biochemistry revealed, haematological and serological value of 7.5 g/dL haemoglobin, 38.2 x 10^9/L, erytrocyte 4.7 x 10^{12}/L, thrombocyte 42 x 10^9/L, ALT 60.4 IU/L, and BUN 53.7 mg/dL. It indicated anemia, leukocytosis, trombocytopenia, and increased ALT and BUN value.

The biopsy of the subcutaneous mass taken for histopathology examination under 400x magnification (Fig.2 and Fig.3) revealed tumor cell growth in the langerhans cells.

Treatment and Discussion

The cat was given with 5% Ringer lactate dextrose 250ml i/v on the first day, with dexamethasone 0.8 mg twice a day, 0.3 ml multivitamin-ATP-mineral, and 80mg enrofloxaxin once a day. Body temperature, pulse and respiratory rate were relatively normal. On the second day, tablet lysin 500mg twice a day was added in the therapy. Surgery was done on the third day to remove the mass. Antibiotic was continued for first 2 days, multivitamin-ATP-mineral and lysin therapy for first 7 days after surgery. The cat condition improved after 10

Fig.1 Mass Develompent on Inguinal Subcutaneous

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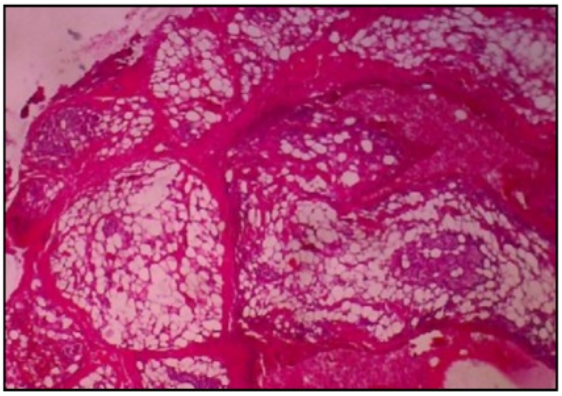

Fig.2 Subcutaneous tissue with tumor cells metastases (HE stanning, magnification 400x)

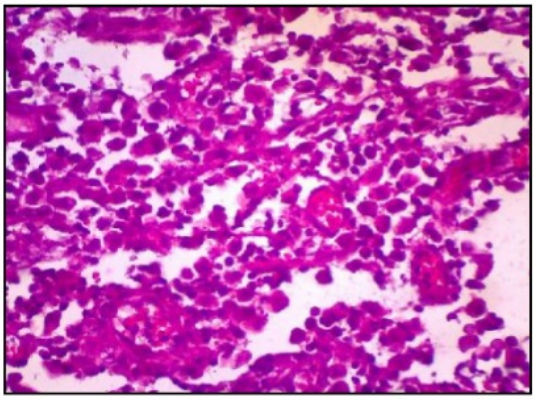

Fig.3 Tumor cells from mass removed(HE stanning, magnification 400x)

days of treatment.

Cats have a narrow range of histiocytic proliferative disease than dogs. Clear feline equivalents of cutaneous histiocytoma and reactive histiocytosis (cutaneous and systemic histiocytosis) has not been reported (Affolter and Moore, 2000; Thongtharb, 2018). The most common histiosytic disorder of cats is feline progressive histiocytosis (Affolter and Moore, 2006). There is no clear cut studies on feline histiocytic disease in cats.

Lysine is a freely available amino acid that can act againts tumors and reduce metastasis. It is possible that lysine can reverse acidosis and consequently decrease proteolytic enzyme activity and or angiogenesis which will lead to the inhibition of extravasations and colonization of circulating tumor cells decreasing the metastasis (Ibrahim *et al.*, 2011). Roomi *et al.*, (2017) reported that lysine could act as natural inhibitors of extracellular matrix (ECM) degradation, since these nutrients modulate matrix metalloproteinases (MMP) activity and strengthen the connective tissue surrounding cancer cells, thereby potentially inhibiting tumor growth, metastases and progression.

Summary

In the above case, the cat was diagnosed feline progressive histiocytosis in subcutaneous tissues. It was progressing to a malignant cancer. Lysine administration could be a potential supportive drugs for this case as an anticancer agent by inhibiting proteolytic enzyme activity and angiogenesis.

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